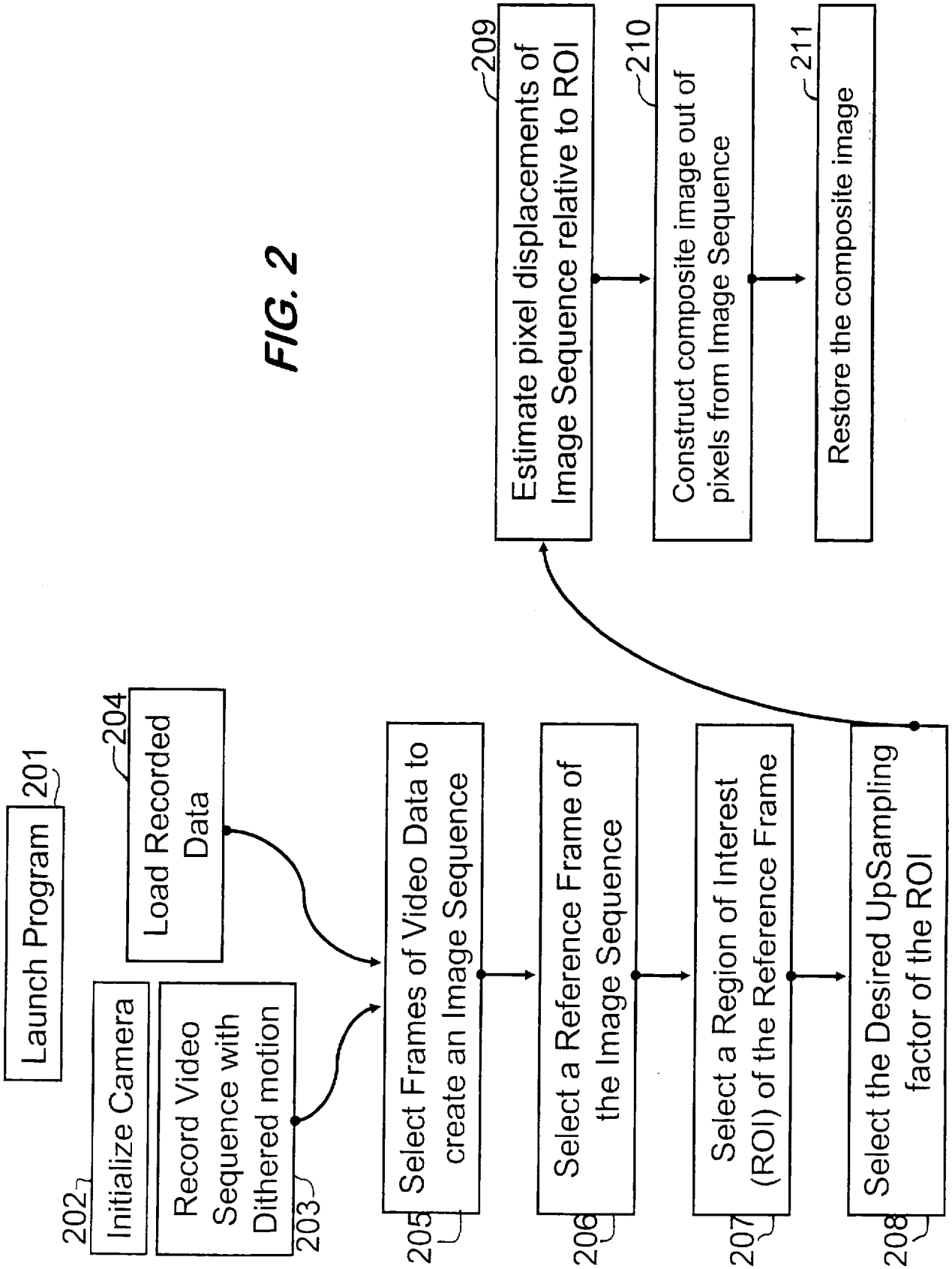
Launch Program
201
Initialize Camera
202
Record Video Sequence with Dithered motion
203
Load Recorded Data
204
Select Frames of Video Data to create an Image Sequence
205
Select a Reference Frame of the Image Sequence
206
Select a Region of Interest (ROI) of the Reference Frame
207
Select the Desired UpSampling factor of the ROI
208
Estimate pixel displacements of Image Sequence relative to ROI
209
Construct composite image out of pixels from Image Sequence
210
Restore the composite image
211

FIG. 2

```
function [shift] = grad_est(ref,tgt);
ref = double(ref);
tgt = double(tgt);
S000 = (ref(1:end-1,1:end-1));
S100 = (ref(2:end-0,1:end-1));
S010 = (ref(1:end-1,2:end-0));
S110 = (ref(2:end-0,2:end-0));
S001 = (tgt(1:end-1,1:end-1));
S101 = (tgt(2:end-0,1:end-1));
S011 = (tgt(1:end-1,2:end-0));
S111 = (tgt(2:end-0,2:end-0));
%
dSdx1 = (S100-S000+S110-S010+S101-S001+S111-S011)/4;
dSdx2 = (S010-S000+S110-S100+S011-S001+S111-S101)/4;
dSdx3 = (S001-S000+S101-S100+S011-S010+S111-S110)/4;
%
aa = dSdx1.^2;
a = sum(aa(:));
bb = dSdx2.^2;
b = sum(bb(:));
ab = dSdx1.*dSdx2;
d = sum(ab(:));
A = [a d; d b];
%
ac = dSdx1.*dSdx3;
bc = dSdx2.*dSdx3;
B = -[sum(ac(:)) sum(bc(:))]';
%
shift = A \ B;
shift = shift';
```

PRIOR ART

FIG. 7